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ABSTRACT

The vast majority of science librarians and chemists in the United States do not have a sufficient command of the Russian language to effectively utilize Russian scientific literature in the original. Nevertheless, it is both desirable and necessary that the scientific community keep aware of developments in the Soviet Union. To meet this need, a considerable amount of material which deals with Soviet science has been made available in English. Not only is a large portion of the Russian scientific literature translated into English, but researchers may also consult many English-language articles, monographs, and reference works which treat Soviet science. The first part of this paper is a bibliographic essay on the more significant sources of English-language information which either provide answers to many reference questions concerning Soviet science or outline procedures for keeping aware of and obtaining Soviet scientific literature in English. This is a reference guide to materials which will allow the librarian or scientist with no knowledge of the Russian language to maintain a fair degree of awareness of Soviet science without consulting material in Russian. (Author/NH)

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ENGLISH-LANGUAGE SOURCES FOR REFERENCE QUESTIONS RELATED TO SOVIET SCIENCE (WITH AN EMPHASIS ON CHEMISTRY)

by
GARY WIGGINS

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INTRODUCTION

The vast majority of science librarians and chemists in the United States do not have a sufficient command of the Russian language to effectively utilize Russian scientific literature in the original. Nevertheless, it is both desirable and necessary that the scientific community keep aware of developments in the Soviet Union.

To meet this need, a considerable amount of material which deals with Soviet science has been made available in English. Not only is a large portion of the Russian scientific literature translated into English, but researchers may also consult many English-language articles, monographs, and reference works which treat Soviet science.

The first part of this paper is a bibliographic essay on the more significant sources of English-language information which either provide answers to many reference questions concerning Soviet science or outline procedures for keeping aware of and obtaining Soviet scientific literature in English. This is a reference guide to materials which will allow the librarian or scientist with no knowledge of the Russian language to maintain a fair degree of awareness of Soviet science without consulting material in Russian.

On the other hand, the member of the science community who can read Russian has at his disposal a vast amount of literature which can supplement his investigations. Most science libraries commonly subscribe to some Russian-language journals. What is unfortunately neglected is a significant body of material which the scientist with even a minimum knowledge of Russian could easily utilize, particularly compilations of data and bibliographies prepared in the Soviet Union covering Soviet and non-Soviet research. Volume V of the Guide to Russian Reference Books,[1] edited by Karol Maichel deals with science, technology, and medicine and lists many bibliographies of this type. Data compilations, however, are not treated in the work. The second part of this paper therefore includes an updated list to supplement Maichel's Guide from 1965 to July 1970, but also contains material in other categories which merits consideration for acquisition by every science library, especially for the area of chemistry.

Reference sources such as Chemical Abstracts, Referativnyi Zhurnal: Khimiia, Science Citation Index, U.S. Government Research and Development Reports, etc., which are already generally known to give extensive coverage to Russian scientific literature are not discussed in this paper. The majority of the English-language material discussed is not listed in Maichel's Guide. Material which I could not physically examine is indicated by an asterisk in the references.

GENERAL REFERENCE SOURCES CONTAINING MATERIAL ON SOVIET SCIENCE AND TECHNOLOGY

The decade of the 1960s witnessed a great increase in the interest all scientists took in Soviet science and technology. Consequently, many valuable references to materials which deal with Soviet scientific activities were included in some of the more general reference tools. Constance M. Winchell's Guide to Reference Books and its supplements[2] should not be overlooked as a

source of information on Russian science and technology. Another well-known work which has recently appeared in a new edition is Frances Briggs Jenkins's Science Reference Sources.[3]

Although the title, Chemical and Process Engineering Unit Operations: A Bibliographical Guide[4] by Kay Bourton, may deceive some potential American users, this British work actually proves to be a very valuable source for English-language material on all aspects of Russian scientific activities. Bourton states in the preface that "an attempt has been made to include as much information as possible relating to works translated from the Russian."[5] Especially noteworthy are the sections "Technical Foreign Dictionaries" and "Translations." The annotations in this work are particularly good.

In response to the demand for knowledge of Soviet science in the early part of the 1960s, the American Chemical Society included Mordecai Hoseh's account of the "Scientific and Technical Literature of the U.S.S.R."[6] in the 1961 publication Searching the Chemical Literature. Portions of this work are mentioned in the appropriate sections of this paper.

The International Federation for Documentation's Directories of Science Information Sources[7] has useful entries in the International Bibliography section; in addition there are references to specific guides for the U.S.S.R. in the section devoted to national guides. A new work which may prove helpful is Current European Directories.[8]

Maichel's Guide to Russian Reference Books, Volume V,[1] issued in 1967, served as a much needed English-language counterpart to Günther Reichardt's Sowjetische Literatur zur Naturwissenschaft und Technik.[9] Coverage extends through 1965, with emphasis on the years 1950-1965. Many references to English-language materials on general aspects of Soviet science are listed with annotations. In addition, the chemistry section should be especially useful for retrospective searches. Included are a number of bibliographies such as Gas Chromatography; Bibliography of National and Foreign Literature, 1952-1960.[10]

One should not depend completely on the Maichel guide for such bibliographies. A chemist is likely to overlook reference ST 824(a): High Molecular Compounds. A Bibliography of National and Foreign Books, 1930-1963 which for some reason appears in the physics section of the work. Supplementing the Guide are the recent Soviet publications, Bibliography of Basic National Bibliographies and Reference Works in the Fields of Natural and Physico-Mathematical Sciences (coverage includes turn of the nineteenth century through 1963),[11] and Bibliography of Soviet Bibliographies on Chemistry and Chemical Technology. 1917-1965.[12] The latter publication does list the work on high molecular compounds.

ORGANIZATION OF SCIENCE AND SCIENCE POLICY IN THE U.S.S.R.

A forthcoming British publication by Sarah White, Guide to Science and Technology in the USSR[13] devotes a major portion to a series of descriptive chapters on all aspects of Soviet science and technology. A useful introduction to Soviet science is found in Guide to World Science, volume 11 which is "The Communist Countries."[14]

As part of the Science Policy Studies and Documents Series, UNESCO has published Science Policy and Organisation of Research in the U.S.S.R.,[15] which, among other subjects, treats historical development, organization, financing, and political, social and economic factors. The Organization for Economic Cooperation and Development has recently produced an English-language version of La Politique de la Science en USSR.[16] Included are discussions of the machinery for elaborating science policy, scientific and technical manpower resources, the academy system, and research in higher educational establishments. Alexander G. Korol's Soviet Research and Development: Its Organization, Personnel, and Funds[17] examines the magnitude and distribution of natural resources allocated to scientific research and development in the Soviet Union.

Science, Technology, and Public Policy; A Selected and Annotated Bibliography gives extensive coverage to Soviet science.[18] What was perhaps the turning point in the development of Soviet science--the events of the first five-year plan--is examined by Loren R. Graham in The Soviet Academy of Sciences and the Communist Party, 1927-1932.[19] The cultural impact of science in pre-revolutionary Russia is treated in Vucinich's Science in Russian Culture, 1861-1917.[20] For a historical summary of the organization of scientific research in the Soviet Union up to 1964, two articles[21] in Survey: The State of Soviet Science are available.

To locate information pertaining specifically to chemistry, one should consult Y.L. Meltzer's Soviet Chemical Industry, 1967[22] which covers history, economic and technological developments, and trade associations in addition to treating specific chemical industries such as plastics, fertilizers, etc. The Noyes Development Corporation's Chemical Guide to Eastern Europe, 1964[23] includes U.S. export policy and total trade with the Soviet Union, as well as Western sales of chemicals and equipment. (A recent dissertation on the same subject is Linda L. Lubrana's "Soviet Policy Toward Science and Scientists.")[24]

SCIENTIFIC AND TECHNICAL INFORMATION IN THE SOVIET UNION

A.I. Mikhailov, for many years the head of the All-Union Institute for Scientific and Technical Information (VINITI), includes a most informative chapter in Osnovy Informatiki.[25] (The second revised and enlarged edition of the Russian work appeared in 1968.) This work was translated as Organization of Scientific and Technical Information in the Communist World.[26] The functions and publications of VINITI and other organizations are well discussed. In "Keeping the Scientist Informed,"[27] Cyril W. Cleverdon examines the interrelationships of the various agencies concerned with scientific and technical information and includes a short discussion of publishing in the Soviet Union. The British report of the Department of Scientific and Industrial Research Aslib delegation to Russia in 1963 should be another good source of information.[28] A similar report is that of the 1966 Special Libraries Association delegation to the Soviet Union, Mutual Exchange in the Scientific Library and Technical Information Center Fields.[29]

A serial publication of the first part of the 1960s which endeavored to stimulate interest in the use of Russian scientific and technical publications is Science East to West (initially called Russian Technical Literature).[30] The material included covers practically every aspect of scientific information, including patents, translations, institutes, etc. The publication served not

only as a current awareness tool, but also included many informative articles such as an abridged version of Boris I. Gorokhoff's Providing U.S. Scientists with Soviet Scientific Information.[31] Although published in 1962, the last-named work remains the best single source of information on Soviet scientific literature and for keeping abreast of Soviet developments. Mordecai Hoseh's treatment of "Scientific and Technical Literature of the U.S.S.R."[6] provides further practical information on the latter topic. Gorokhoff also furnished a useful work in English in the translation Technical Information in the U.S.S.R.[32] by Aram S. Melik-Shakhnazarov. Locke states in the forward that "the book is actually the most comprehensive review of the Soviet technical information service to appear in the U.S.S.R. in recent years."[33] For older information, the bibliography to "Soviet Chemical Literature"[34] by Julian F. Smith should be consulted. A recent dissertation which might be of interest is Dale Lockard Barker's "Characteristics of the Scientific Literature Cited by Chemists of the Soviet Union."[35]

BIOGRAPHICAL INFORMATION

The most up-to-date continuing series which deals with biographical information is Prominent Personalities in the USSR.[36] It is planned that a cumulative volume will be published every two years with quarterly issues appearing between cumulations.[37] The biography and bibliography for the entries seem to be much fuller and more current than any of the specialized science sources for the U.S.S.R. One is much more apt to find information on the younger scientists in this work than in the Turkevich's Prominent Scientists of Continental Europe[38] or Soviet Men of Science.[39] In fact, the scanty information for Soviet entries in the former volume seems to imply an assumption by the authors that the earlier volume will be consulted for more information. For chemistry, Turkevich has also written Chemistry in the Soviet Union[40] More than two-thirds of this work is devoted to a listing of Soviet dissertations in chemistry and recent publications of members of the U.S.S.R. Academy of Sciences. It also lists many historical figures, but suffers from lack of an index. The second revised and enlarged edition of Who's Who in Soviet Science and Technology[41] appeared in 1964. The only special feature of the volume which might lend it lasting utility is the appendix which lists scientists by subject field. Joint Publications Research Service produces a series called Biographies of Soviet Scientists[42] which presumably includes translations of the various Soviet series of biographies of scientists.

In checking the biographical sources for a particular Soviet chemist, B.V. Deriagin, it was found that the most recent information is listed in the Biography Index.[43] For the older historical figures, Poggendorff's Biografisch-literarisches Handworterbuch[44] gives much information, including select bibliographies. The new Dictionary of Scientific Biography[45] covers all periods of science, excluding only living scientists. Coverage of Russian scientists in the volumes which have appeared to date is very informative.

Current positions held by Soviet chemists might be most easily located through the International Directory of Research & Development Scientists,[46] which has a useful geographical listing. Unfortunately, the editors of the new International Chemistry Directory,[47] although promising to expand the coverage in later volumes, must admit to only fractional coverage of the Soviet Union in the initial volume.

ACADEMIC AND RESEARCH INSTITUTES: LOCATION, PERSONNEL, DESCRIPTION

The "Guide to Science and Technology in the USSR"[13] should include a directory of the chief Soviet scientific and technical establishments. The Academies of Sciences not only of the Russian Soviet Federated Socialist Republic but also of all the Soviet republics are listed in the Guide to World Science, volume 11.[14] Many of the works cited in previous sections include information on research facilities, especially the DSIR-Aslib report[28] and, of course, The Soviet Academy of Sciences and the Communist Party[19]. Turkevich in Chemistry in the Soviet Union[40] describes the main areas of research of many of the chemistry institutes. For further information on research in physical chemistry institutes, the Frumkin and Emanuel article "Fifty Years of Soviet Physical Chemistry,"[48] should be consulted. An earlier guide is Scientific Research Institutes of the USSR[49] which lists 1,325 such organizations. In addition, 575 institutes of the various Academies of Sciences are included.

HISTORY OF CHEMISTRY

The noted chemists A.N. Frumkin and N.M. Emanuel collaborated to produce an abridged version of The Development of Physical Chemistry in the USSR, 1917-1967. (Other volumes in this same series which deal with chemistry include The Development of General, Inorganic, and Analytical Chemistry in the USSR, and The Development of Organic Chemistry in the USSR.)[50] Surveys of the main developments in kinetics, catalysis, radiation chemistry, quantum chemistry, and other fields are presented. S.J. Volfkovitch's "Chemical Science and Technology in the USSR"[51] gives a brief outline of the status of chemistry before and after the revolution as well as describing current research emphasis. Chemistry in the Soviet Union[40] treats not only developments of the last fifty years, but also includes brief chapters on the history of pre-revolutionary chemistry. Turkevich also wrote the section "Chemistry" in Survey: The State of Soviet Science.[52]

PERIODICALS AND MONOGRAPHS: TRANSLATIONS AND LOCATIONAL TOOLS

General Works

The Library Association's Guides to Scientific Periodicals[53] includes coverage of the U.S.S.R. periodical literature up to 1966 and lists some older directories not found in other sources consulted. Perhaps the most practical guide to all aspects of translation is Kurt Gingold's article "Translations for the U.S. Scientist."[54] Russian chemical literature is not neglected in the recent edition of The Use of Chemical Literature, which includes C.R. Burman's "Translations and Their Sources with Special Reference to Russian Literature."[55] It should be noted, however, that the situation with respect to translations is constantly changing, so that even this very recent work does not reveal that Technical Translations has been replaced by Translations Register-Index,[56] and that the Monthly Index of Russian Accessions[57] ceased publication as of May 1969.

The usefulness of Kay Bourton's work[4] for translations cannot be overemphasized. Much space was devoted to translation in Science East to West.[30]

One of the more recent aids to the acquisition of translations is Isabel H. Jackson's Acquisition of Special Materials.[58] Although The USSR and Eastern Europe: Periodicals in Western Languages[59] does not include scientific and technical periodicals, the work does list several important titles which might prove useful, e.g., the Joint Publications Research Service (JPRS) publication on biographies mentioned earlier.[42]

Directories of Translators

For American translators of scientific and technical material, two works complement each other. The American Translators Association has recently published an up-to-date edition of the ATA Professional Services Directory.[60] Though older, it has been noted by Gingold that Special Libraries Association's Translators and Translations; Service and Sources in Science and Technology[61] contains many listings not found in the ATA publication. Subject and language indexes make the publications particularly easy to use. A recent British directory is Patricia Millard's Directory of Technical and Scientific Translators and Services.[62] For international coverage, there is the International Directory of Translators and Interpreters.[63]

Indexes of Translations

Translations of monographs are listed in UNESCO's Index Translationum,[64] the 1969 volume of which is now available. The National Lending Library for Science and Technology periodically issues a List of Books Received from the USSR and Translated Books,[65] which lists translations into English and other Western European languages, as well as annotating the Russian titles. The lists are distributed in the U.S. by the National Technical Information Service (which is a new agency, created September 2, 1970, and has embraced all the functions of the Clearinghouse for Federal Scientific and Technical Information) under an AD-number, such as AD-697-508.

A very comprehensive work for translations in all forms is the ETC's(European Translation Centre) World Index of Scientific Translations,[66] an annual cumulation of citations and translations from non-Western languages. The U.S. does not belong to the ETC, but cooperates with that organization through the National Translations Center at John Crerar Library in Chicago. ETC also issues a bi-weekly List of Translations Notified to the ETC.[67] The National Translation Center now publishes Translations Register-Index,[56] which lists unpublished translations deposited in the center, as well as items listed by NTIS in the U.S. Government Research and Development Reports, and items available from many other sources. The British counterpart is the NLL Translations Bulletin,[68] which also reproduces certain translations in each issue. The section "Books Received from the USSR" mentioned earlier as a separate publication is included in the Bulletin. A commercial endeavor which promises to provide easier access to JPRS translations is Sci/Tech Quarterly Index to JPRS Documents.[69] For older biochemistry and organic chemistry translations relating to medicine, it might be wise to check the NIH Translations Index.[70]

Lists of Russian and Soviet Scientific Journals and Cover-to-Cover Translations

ETC includes in the World Index of Scientific Translations[66] a section called "Translations Journals" which is a list of periodicals translated cover to cover, abstracted publications, and periodicals containing selected articles.

ETC has also recently published Translations Journals, List of Periodicals Translated Cover-to-Cover, Abstracted Publications and Periodicals Containing Selected Articles.[71] The National Lending Library has published separately Current Serials Received by the NLL.[72] Part II lists Cyrillic titles in Cyrillic, including translations of the titlesinto English. Part III lists cover-to-cover translations. This is supplemented periodically in the NLL Translations Bulletin.[73] A handy tool for discovering whether a translation of a journal exists is Himmelsbach and Boyd's A Guide to Scientific and Technical Journals in Translation.[74] A special feature is the section on frequently encountered abbreviations of Russian-language publications. Maichel's Guide[1] also includes "Selections, Collections, and 'Translations' Journals." A slightly older reference work is English Language Equivalent Editions of Foreign Language Serials,[75] which, however, omits abstracts, journals and collections.

C.R. Burman includes in his article on translation the list "Some Foreign Journals of Chemical Interest Available in English."[55] A much fuller list of Russian chemical journals (not translations) which are considered to be "Core Journals in Chemistry and Chemical Engineering," may be found in appendix B of the report An Overview of Worldwide Chemical Information Facilities and Resources.[76] An older list with broader coverage is Zikeev's Scientific and Technical Serial Publications of the Soviet Union, 1945-1960.[77]

Translated Tables of Contents

Some Soviet journals are included in the coverage of Current Contents: Physical and Chemical Sciences.[78] The Monthly Index of Russian Accessions[57] often included translations of the contents pages of journals of interest to chemists. Between 1957 and 1960, Consultants Bureau published such lists under the title SST. Soviet Science in Translation.[79] Antedating this was a pioneering attempt by the Brookhaven National Laboratory's Guide to Russian Scientific Periodical Literature.[80]

Union Lists of Russian and Soviet Scientific Serial Publications

The location of copies of serials dealing with Soviet and Russian science, including the holdings by year, can be most easily ascertained in CAS Source Index[81] (formerly known as ACCESS). This publication has remarkably full coverage for both Soviet and pre-revolutionary materials. Another list, specifically for Soviet materials, is Rudolf Smits' Half a Century of Soviet Serials.[82] For Europe, one might also consult the Union List of Russian Scientific and Technical Periodicals Available in European Libraries.[83]

ENGLISH-LANGUAGE AWARENESS TOOLS FOR SOVIET SCIENCE

Abstracts

In addition to the extensive coverage of Russian chemical literature in Chemical Abstracts, the chemist can avail himself of a number of specialized abstracts. Joint Publications Research Service issues irregularly USSR Scientific Abstracts, "Section 2: Chemistry, Chemicals, and Chemical Products."[84] East European Science Abstracts[85] covers "certain Russian journals where these are not translated cover-to-cover." Another JPRS publication, Conferences in

the Soviet Bloc, contains summaries, abstracts, and extracts of articles from Soviet, East European and other scientific and technical journals concerning current conferences. A work which should be useful as a starting point for background material is Soviet Science and Technology; A Bibliography of the State of the Art, 1955-1961.[87] It contains many review articles for particular subjects, e.g., "Progress in the Chemistry of Organosilicon Compounds."

Indexes and Bibliographies

Though not devoted specifically to Soviet chemical coverage, several specialized indexes do make an attempt to provide at least partial coverage of the Russian literature. The Index of Reviews in Organic Chemistry[88] includes Russian Chemical Reviews in its coverage. The Index to Reviews, Symposia, Volumes, and Monographs in Organic Chemistry[89] lists English translations of Russian reviews and has a list of monographs translated from Russian. The American Chemical Society's Bibliography of Reviews in Chemistry[90] covered review abstracts from Chemical Abstracts and hence includes Russian titles.

In order to keep aware of the new monographs appearing in the Soviet Union, the scientist should consult the Index to Forthcoming Russian Books: Technical Sciences,[91] which is a translation of titles from Novye Knigi. From time to time various U.S. government agencies publish bibliographies on Russian science. These are listed in the U.S. Monthly Catalog of U.S. Government Publications or in the U.S. Government Research and Development Reports. An example is Russian Radioecology: A Bibliography of Soviet Publications with Citations of English Translations and Abstracts.[92] It should be remembered that Russian chemistry is usually covered in special area bibliographies. The recent Bibliography of Chemical Kinetics and Collision Processes[93] includes the citations in Chemical Abstracts and also lists "Kinetika and Kataliz" (sic) as one of the sources.

PATENTS

Information on Soviet patents can be found in Frank Newby's How to Find Out About Patents.[94] He mentions the Derwent publication, Soviet Inventions Illustrated,[95] which gives abstracts of Russian patents. Technical Information in the USSR[96] includes a good discussion of Soviet patents. This is included in the section "Sources of Technical Information," which is actually a guide to Russian scientific and technical literature. Soviet Patent and Trade Mark Law[97] includes a translation of the patent laws in effect as of December 1959. The SLA delegation report includes perhaps the best treatment of patents in Frank E. McKenna's "Standards, Patents, and Technical Reports."[98]

The Israel Program for Scientific Translation translated at least one class of the Soviet Register of Inventions Published in the USSR (1896-June 1963).[99] The volume I examined did not deal specifically with chemistry, but included some chemical patents relating to agriculture. Aslib has recently published a Guide to Foreign-Language Printed Patents and Applications[100] which might be of some use.

ACQUISITIONS

Two of the works mentioned above contain the most useful information on procurement of Soviet materials. Isabel Jackson deals with the problem in Acquisition

of Special Materials.[58] Also, Gorokhoff includes a section on acquisition in Providing U.S. Scientists with Soviet Scientific Information.[101]

CURRENT AWARENESS TOOLS FOR FUTURE GUIDES

In order to keep aware of useful material which might appear in the future, it is advisable to regularly check several of the information science bulletins. Some of the more important are Scientific Information Notes,[102] FID News Bulletin,[103] and Abstract Journal: Informatics.[104]

SCIENTIFIC RUSSIAN GRAMMARS AND READERS

If the scientist or researcher has decided that it would be profitable for him to join the select few in the non-Communist scientific community who can read Russian, he can choose from a variety of useful language aids. A recent general work which lists "Grammars for Scientists" is A Guide to Foreign Language Grammars and Dictionaries.[105] Some of the more current works are Beresford's Complete Russian Course for Scientists,[106] Kaganoff's Practical Scientific Russian,[107] Waring's Russian Science Grammar,[108] and Wyvill's Russian for Chemists.[109] A book which professes to teach facility in reading foreign-language texts without emphasizing grammar is An Approach to Technical Translation; An Introductory Guide for Scientific Readers.[110] E. Emmet Reid attempts to "encourage and help the chemist to go directly to any chemical article that promises to bear on his field of specialization, rather than wait for a translation to be published"[111] in Chemistry Through the Language Barrier.

DICTIONARIES

Even after the rudiments of the language are mastered, the need for general and specialized dictionaries never ceases. Two bibliographies have been recently published which should aid in selection: UNESCO's Bibliography of Interlingual Scientific and Technical Dictionaries,[112] which omits dictionaries published before 1950, should be supplemented by A Bibliography of Scientific, Technical, and Specialized Dictionaries[113] and Kay Bourton's monumental work.[4] Neiswender's Guide to Russian Reference and Language Aids[114] also includes a good section on technical dictionaries.

Some recent works on abbreviations may also be of use to scientific translators. A recent study which compared the preferences by professional translators for certain dictionaries may be of interest.[115] The Glossary of Russian Abbreviations and Acronyms[116] is very comprehensive. Zalucki's Dictionary of Russian Technical and Scientific Abbreviations with Their Full Meaning in Russian, English and German[117] has only about one-third as many entries as the work just cited. The reference librarian should find especially useful the Index of Abbreviations and Full Titles of Scientific and Technical Periodical Literature.[118] As an introductory aid for the novice, J.F. Smith's article on "Abbreviations in Russian Chemical Literature"[119] provides some helpful hints.

The major portion of the following part of this paper consists of the bibliographic listing of material which updates portions of Maichel's Guide.[1] As indicated earlier, further categories not to be found in that work are included here.

It is, of course, folly to expect that every science library would make an effort to acquire all of the material listed therein. But surely some of the works, notably, the Russian titles listed earlier in this paper[120] deserve a place in most science libraries. There should also be available a copy of Terent'ev's Chemical Literature and Its Use.[121] And given the fact that Gol'danskii's research on the Mössbauer effect in chemistry has had such a strong impact on Western science, it is not unreasonable to expect a library to acquire the Russian counterpart of the Mössbauer Effect Data Index,[122] particularly since the compilers of the English volume state that there are probably omissions of "some of the foreign literature (e.g. from the U.S.S.R.)."

R.T. Bottle[123] mentions the Russian series Thermodynamic Constants of Substances[124] several volumes of which have appeared to date, and Thermodynamic Characteristics of Individual Substances.[125] Another recent work is the third volume of Solubilities of Inorganic and Organic Compounds,[126] the first two volumes of which were translated in 1963. (Users should beware of the misprints in both Russian names in Bottle's work: one should read Glushko for Glushkov and Kafarov for Kaprov.) Another data compilation which was considered important enough to merit translation in a revised and enlarged form is G.V. Samsonov's Handbook of the Physicochemical Properties of the Elements.[127] In the way of monographs, the series Analytical Chemistry of the Elements[128] is being translated by the Israel Program for Scientific Translation and is available from Ann Arbor-Humphrey.

Of course, there is no reason to state the value of a bilingual chemical dictionary which includes a Western language, but the Short Chemical Encyclopedia[129] should also be a valuable reference work.

Obviously, the history of science in a particular country is an area of research which demands original language material. In the case of Russian science, with chemists of the stature of Mendeleev, Beilstein, etc., it would be a gross oversight not to collect recent Soviet writings.

Although translation has served as a great aid for the Western scientist, it cannot possibly substitute for the breadth of coverage possible by consulting even a portion of the untranslated material available in the original. It is with the hope of opening new avenues of awareness that the Appendix of this paper is included.

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APPENDIX OF RECENT SOVIET REFERENCE WORKS OF POSSIBLE INTEREST TO CHEMISTS

A few of these Appendix entries were included in or are continuations of listings in Maichel's Guide to Russian Reference Books, volume V (see reference no. 1). This is indicated when such is the case: e.g., the second Appendix entry gives (Maichel: ST2(a)) which implies that this work is described in Maichel's Guide, entry ST2(a).

As in the references, numbers of the form (KL 68:17367) refer to the year and entry number in Knizhnaia Letopis', not an LC number. In addition, some of the older listings are taken from Ezhegodnik Knigi and are indicated as follows: (Ezh. Kn. 65:19469).

General Scientific Bibliographies and Guides: Libraries, Institutes, Publishing Houses, etc.

Alma-Atinskii meditsinskii institut. Bibliografiia nauchnykh rabot sotrudnikov kafedry biokhimii, 1935-1968 (Alma Ata Medical Institute. Bibliography of Scientific Works of the Faculty of the Biochemistry Division, 1935-1968). Alma Ata, 1969. 51p.
(KL 70:22433)

Baldaev, R.L. Ukazatel' osnovnykh otechestvennykh bibliografii i spravochnykh izdanii po estestvennym i fiziko-matematicheskim naukam (Guide to Basic Russian Bibliographies and Handbooks in the Natural and Physical Sciences. Covers turn of the 19th Century through 1963). Leningrad, Akademiia Nauk SSSR--Biblioteka, 1966. (Maichel: ST2(a))

Davidenkova, N.K., comp. Biblioteki SSSR: Spravochnik estestvennoi i fiziko-matematicheskoi nauki (Libraries of the USSR: Guide to the Natural and Physical Sciences). Leningrad, Akademiia Nauk SSSR--Biblioteka, 1967. (Source: UNESCO Bulletin for Libraries 1/2 (1969), p.44)

Institut neorganicheskoi khimii, Riga. Isledovaniia...za 20 let. Bibliografiia, 1946-1966 (Institute of Inorganic Chemistry, Riga. Bibliography of experiments. 1946-1966) Riga, Zinatne, 1968. 197p.
(KL 69:8779)

Institut obshchei i neorganicheskoi khimiik Kiev. Bibliografiia trudov sotrudnikov laboratorii Instituta....v Odesse. 1945-1966 (Bibliography of Works by the Faculty of the Institute in Odessa). Institute of General and Inorganic Chemistry, Kiev. Kiev, Naukova dumka, 1967. 48p.
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Institut prikladnoi khimii, Leningrad. Sbornik referatov po khimii i tekhnologii izotopov za 19-- (Institute of Applied Chemistry, Leningrad. Abstracts on the Chemistry and Technology of Isotopes for 19--_. (Title varies.) Leningrad.
1963 (KL 65:19312
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Metallurgia. Izdaniia za 1939-1966 gody. Bibliograficheskii ukazatel' (Metallurgy (Publishing House). Bibliographic Guide to Publication. 1939-1966). Moskva, 1967. 414p.
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Nauchno-issledovatel'skii institut shkol, Kaunas. Bibliografiia izdanii...knig i statei nauchnykh sotrudnikov, 1958-1968 (Scientific Experimentation Institute, Kaunas, Bibliography of Published Works of the Faculty, 1958-1968). Vil'nius, 1968. 151p.
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Tsentral'naia nauchno-tekhnicheskaia biblioteka khimicheskoi promyshlennosti. Moskva. Ukazatel' bibliograficheskikh spravok, vypolnennykh TsNTB khimicheskoi promyshlennosti v 1959-1966 godakh (Central Scientific and Technical Library for the Chemical Industry. Guide to Bibliographic Lists Prepared by the Library: 1959-1966). Moskva, NIITE Khim., 1967. 90p.
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Tsentral'nyi institut nauchno-tekhnicheskoi informatsii i tekhniko-ekonomicheskikh issledovanii po khimicheskomu i neftianomu mashinostroeniiu, Moskva. Ukazatel' izdanii za 19__ (Central Institute of Scientific and Technological Information and Experimentation for Chemical and Petroleum Engineering, Moscow. Publications for 19__). Moskva, 1967. 1966 (KL 67:16813)

Vsesoiuznyi institut nauchnoi i tekhnicheskoi informatsii. Izdaniia VINITI za 15 let: 1952-1966 (All-Union Institute of Scientific and Technical Information). VINITI's Publications in the 15-year Period 1952-1966). Moskva, VINITI, 1969.
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Periodical Indexes and Directories

Akademiia Nauk SSSR. Doklady: Novaia seriia. Sistematicheskii ukazatel' k tomam 101-155 za 1955-64 (Systematic Guide to vol. 101-155 (1955-64) of the USSR Academy of Sciences. Doklady). Leningrad, Nauka, 1967. 833p.
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See (Maichel ST368(a)) for earlier indexes.

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(KL 68:37481)

Moscow University. Uchenye zapiski. Sistematicheskii ukazatel' (1833-1961) (Systematic Guide to Uchenye Zapiski). Moskva, Izdatel'stvo Moskovskogo universiteta, 1969. 176p.
(KL 67:34396)

Tsentral'naia nauchno-technicheskaia biblioteka, Moskva. Svodnyi spisok otechestvennykh i inostrannykh periodicheskikh izdanii, vypisannykh dlia TsNTB i ee filialov (Central Scientific and Technical Library, Moscow. Union List of National and Foreign Periodical Publications Received by the CSTL and Its Branches). Moskva. 35p.
1968 (KL 69:11967)

Tsentral'naia nauchno-tekhnicheskaia biblioteka khimicheskoi promyshlennosti, Moskva. Ukazatel' otechestvennykh i inostrannykh periodicheskikh izdanii postupivshikh v TsNTB khimicheskoi promyshlennosti v (year) (Central Scientific and Technical Library for the Chemical Industry. Guide to National and Foreign Periodical Publications Received in the Library in (year). Moskva.
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Chemistry Bibliographies

Abramova, I.G. Berilii. Svoistva, primenenie, tekhnologiia obrabotki. Bibliogr. ukazatel' (Annot.) Otechestvennaia i inostr. literatura za 1960-1966 (Beryllium. Characteristics, Use, Technology, Processing. Annotated Bibliographic Guide to National and Foreign Literature, 1960-1966). Moskva, NIAT, 1967.
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Artsikhovskaia, N.V. Fotosintez. Ukazatel' otechestv. i inostr. literatury (Photosynthesis. Guide to Soviet and Foreign literature). Moskva, Izd. Mosk. universiteta, 1968. 1958-1962.
(KL 69:735)

Bibliograficheskii ocherk razvitiia otechestvennoi kolloidnoi khimii (Bibliographic Essay on the Development of Soviet Colloid Chemistry). Kiev, Naukov dumka,
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